A NEW SPECIES OF *PHILOTES* FROM UTAH

(Lepidoptera, Lycaenidae)

By J. W. Tilden and J. C. Downey

Examination of the genitalia of specimens of the genus *Philotes* from Arizona has satisfied the authors as to the distribution and proper fixation of the binomen *Philotes rita* B. & McD. This determination was based on specimens collected in southern and central Arizona by Tilden and data furnished by Comstock (1953, Bull. So. Calif. Acad. Sci., 52 (3): 127-136) concerning the varied distribution of specimens in the type series. Specimens taken in Tooele County, Utah, approximately four hundred miles north of the known range of *Philotes rita*, while showing similarities to the latter, are sufficiently distinct in alar and genitalic characters to warrant recognition as a separate species.

Philotes pallescens, new species

Holotype Male: Upper surface of both wings pale blue, with faint lilac reflections; dark margins very narrow; hind wings with marginal spots distinct in cells Cu_1, Cu_2 and 2nd A, anterior three spots reduced; fringes white, darkened at end of vein Cu_2, and at anal and posterior angle; fringes entirely white on hind wing.

Lower surface of wings cinereus white; black borders narrow, projecting slightly into fringes at ends of veins; macules reduced in size; forewings with marginal row of spots almost obsolete, only four evident; submarginal row of six more conspicuous spots; postmedian row of seven distinct, subcircular spots, strongly excurved opposite discal cell, noticeably larger and darker than distal rows; sub-basal bar with a reduced macule below, basal bar entire. Hind wings with marginal row of six distinct, circular macules, most posterior macule elongate; aurora orange, lunulate, reduced, anterior lunula separate and obsolete; proximal edge of aurora with irregular touches of black scales; irregular postmedian row of eight small black spots, anterior two just above thin discal bar; sub-basal row of four black spots, most posterior spot extremely reduced and bordering on inner margin. All macules proximal to aurora minute but distinct. Thorax above, blue; abdomen dark gray obscurely ringed with white; palpi white, sparsely dark above; antennae annulated black and white, inner face of club rufous.

Genitalia: (See Plate II, figures 1 and 3.) Valva with distal one third (cucullus) abruptly widened laterally, when structure

is flattened and viewed ventrally, so that the lateral margin describes approximately a 90° angle (in *P. rita* the widening of the cucullus is gradual and the angle obtuse); terminal process of cucullus (digitus) armed with 26 spines, with length of distal spines approaching width of narrowest portion of valva; crista rather broad, edges angulate; tegumen and uncus in lateral view shorter and stouter than in *P. rita* (Plate I, figs. 3 and 4); proximal edge of aedeagus bilobate, with lobes extended laterally slightly more than width of aedeagus at its widest point; distal ¼ of gnathos sharply recurved.

Allotype Female: Upper surface of both wings pale brown; terminal line dull black, narrow; fringes white, darkened slightly at end of vein Cu_2, and at anal and posterior angles; basal third of fore wings washed with mouse gray, this color especially conspicuous in discal cell and cell Cu; a dark spot at apex of cell. Hind wings with aurora showing on upper surface, pale orange, wide; marginal spots dark, small, six in number, anterior two obsolescent; auroral area infused with white scales.

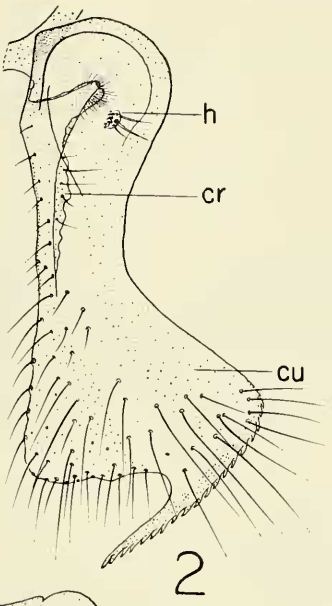
Lower surface of both wings as in male except all macules slightly larger; ground color with a slight brownish tint. Fringes, borders, palpi and antennae as in male; body gray above, dull white below.

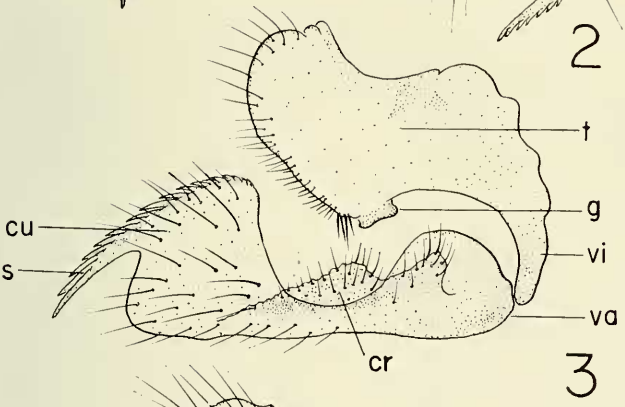
Type Material: Holotype male, Little Granite Mountain, Dugway Proving Grounds, Tooele County, Utah, August 20, 1953, collected by H. E. Cott. Allotype, same data. Paratypes, twenty-two designated, 3 males and 7 females same data as type, 8 males, 2 females topotypical, collected August 16, 1954 by James L. Eastin, one male, Stansbury Mountains, Tooele County, Utah, August 17, 1953, one male, Dog Area, Dugway Proving Ground, Tooele County, Utah, July 16, 1953, both by H. E. Cott. All of the type material was taken in association with the plant *Eriogonum sp.* Holotype, allotype, and one male and one female paratype deposited in the collection of the California Academy of Sciences, San Francisco, California; one male and one female

EXPLANATION OF FIGURES ON PLATE 11

Fig. 1, ventral view of flattened valva, *Philotes pallescens*, paratype; Fig. 2, same view, *P. rita* B. & McD. from Cherry, Yavapai County, Arizona; Fig. 3, lateral outline showing part of genital armature, *P. pallescens*, holotype; Fig. 4, same view, *P. rita* B. & McD. from Cherry, Yavapai County, Arizona.

cr—crista, cu—cucullus, g—gnathos, h—sclerotized protuberance, s—spines on digitus, t—tegumen, vi—vinculum, va—valva.





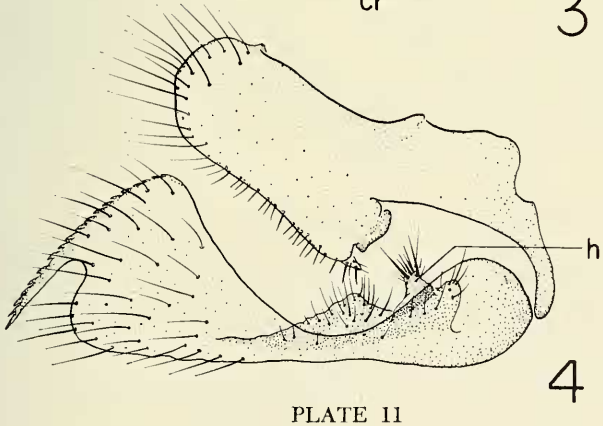


PLATE 11

paratype each to the Los Angeles County Museum, Los Angeles, California, and for the collection of Rudolph Mattoni of the Dept. of Genetics, University of California, Los Angeles. The remaining paratypes are in the collections of the authors and at Dugway Proving Grounds, Dugway, Utah.

Variations in the type series are as follows: male upper surface with submarginal row of black macules on hind wing varying in

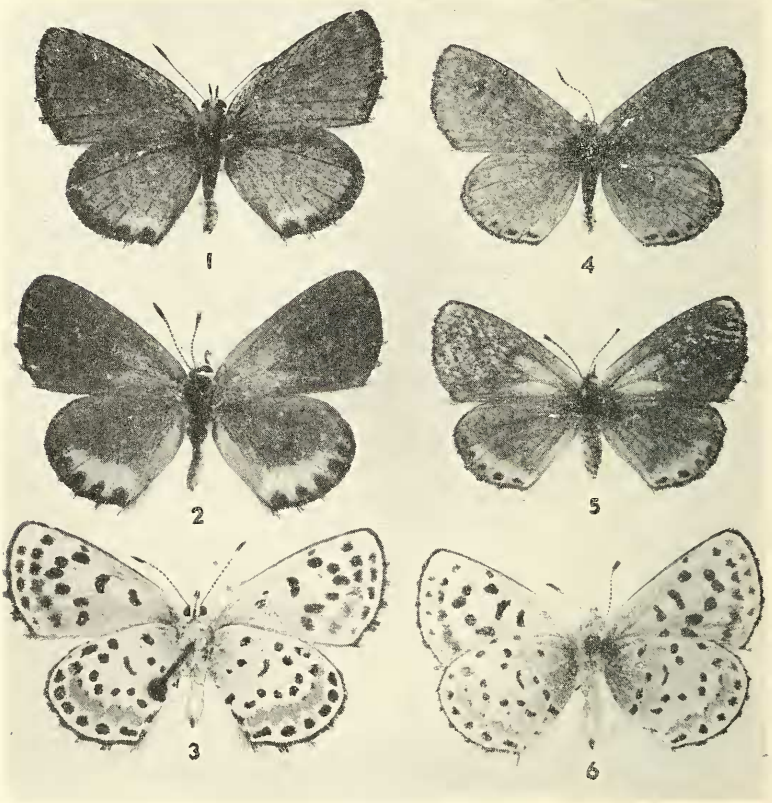


PLATE 12
All figures enlarged x 2.2.

1. Philotes rita B. & McD., male. Humboldt, Ariz., VIII .26 .53.
2. Ditto, female, same data.
3. Ditto, female, underside. Cherry, Ariz., VIII .19, 53 All coll. J. W. T.
4. Philotes pallescens Tilden & Downey, n.sp. holotype male. Dugway Proving Ground, Tooele County, Utah, VIII .20 .53.
5. Ditto, paratype female, same data.
6. Ditto, allotype female, underside, same data. All coll. H. E. Cott.

number from 3 to 6 the posterior spots tending to be more pronounced, the anterior 3 less so, or wanting; undersurface of forewing of both sexes with marginal row of 4 minute gray spots or none; submarginal row of 5 or 6 spots, either subcircular or partly fused, almost obsolete in one specimen; postmedian series may have reduced macule near costal margin or none; hind wing with macule at inner margin of wing in sub-basal series, or none; spines on digitus of male genitalia varying in number from 15 to 26; upper surface of both wings of female with basal mouse gray infusions present or indistinct, wanting in older specimens.

Diagnosis: Superficially the male of *pallescens* bears little resemblance to the male of *rita*. On the dorsal surface, the orange aurora, usually clearly marked in *rita*, is present in only one paratype of *pallescens*, and it is much reduced. The terminal border and dark pigmentation of *pallescens* are much reduced compared to those of *rita*, causing the Utah species to appear pale by comparison. The pale appearance of the underside of *pallescens* is due largely to the small size of the macules and to the reduced aurora, emphasizing the pale ground color. The lighter ground color of both surfaces of the wings of female *pallescens*, and the exaggeration of the basal pale areas on the upper surface, give it a rather different facies from that of *rita* but nevertheless, close relationship is indicated.

The genitalia of *pallescens* are remarkably similar to those of *rita*, yet can be separated easily from the latter by several structures. Peculiar to the new species are the sharply angled lateral border of the valves, mentioned above, the long spines on the digitus, and the higher more angulate crista. In addition, *rita* possesses a rather marked spiny protuberance on the distal dorsomedial portion of the valve (Plate 1, fig. 4, h) which is best seen in lateral view and which is lacking in *pallescens*. The distal part of the aedeagus is bilobate in both species; in the latter, however, the lobes extend further laterally in relation to the width of the aedeagus, and the angle of the bifurcation is much more obtuse. The differences of the tegumen and uncus are seen in Plate 1, figures 3 and 4. The gnathos is somewhat shorter, and distally it is more sharply curved in *pallescens* than in the longer more gradually recurved structure of *rita*. The genitalia of *P. rita* figured by Barnes and McDunnough (1917, Contr. Nat. Hist. Lepid. No. Amer., 3(4):213-216, pls. XVI, XVII [=pp. 262-265]), appear to be of two species. Figure 5 on plate XVII resembles *pallescens*, and figure 7 resembles nominate *rita*. The genitalia of *P. pallescens* differs from *Philotes spaldingi* B. & McD. more markedly than it does from *rita*.

A single specimen of *Philotes enoptes ancilla* B. & McD. was taken earlier in the season in the same area as the new species.

We are indebted to Mr. Lester Brubaker for the photograph.